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08/886,226	07/01/1997	ROGER S. COLLINS	200303140-2	8579

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EXAMINER	
COUSO, YON JUNG	
ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	08/886,226	COLLINS ET AL.	
	Examiner	Art Unit	
	Yon Couso	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 1999*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date. _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. This office action is in response to the Continued Prosecution Application (CPA) filed on May 17, 1999.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 15-21 are directed to a single means claims which are rejected under 35 USC 112, first paragraph as being of undue breath (see MPEP 2164.08), In re Hyatt, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983).

3. Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40, line 2, please show what RLE stands for.

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-33 and 35-43 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-14, 22-33, and 35-43 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent and recent Federal Circuit decisions indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or

thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. The method including steps of generating, storing, providing, and decolorizing is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The Applicant has provided no explicit and deliberate definitions of "generating", "storing", " providing" or "decolorizing" to limit the steps to the electronic form.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows (see also MPEP 2106):

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
>
> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 15-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 15-21 define a data structure

embodying functional descriptive material (i.e., a computer program or computer executable code). However, the claim does not define a "computer-readable medium or computer-readable memory" and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on "computer-readable medium" or equivalent; assuming the specification does NOT define the computer readable medium as a "signal", "carrier wave", or "transmission medium" which are deemed non-statutory (refer to "note" below). Any amendment to the claim should be commensurate with its corresponding disclosure.

Note:

"A transitory, propagating signal … is not a "process, machine, manufacture, or composition of matter." Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter." (In re Nuijten, 84 USPQ2d 1495 (Fed. Cir. 2007). Should the full scope of the claim as properly read in light of the disclosure encompass non-statutory subject matter such as a "signal", the claim as a whole would be non-statutory. Should the applicant's specification define or exemplify the computer readable medium or memory

(or whatever language applicant chooses to recite a computer readable medium equivalent) as statutory tangible products such as a hard drive, ROM, RAM, etc, **as well as** a non-statutory entity such as a "signal", "carrier wave", or "transmission medium", the examiner suggests amending the claim to *include* the disclosed tangible computer readable storage media, while at the same time *excluding* the intangible transitory media such as signals, carrier waves, etc.

Merely reciting functional descriptive material as residing on a "tangible" or other medium is not sufficient. If the scope of the claimed medium covers media other than "computer readable" media (e.g., "a tangible media", a "machine-readable media", etc.), the claim remains non-statutory. The full scope of the claimed media (regardless of what words applicant chooses) should not fall outside that of a computer readable medium.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-31, 33-35, and 38-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Harrington et al (US Patent No. 5,644,406).

As to claim 1, Harrington teaches a method of compressing a digital image having at least three textures to reduce the amount of storage space required for

holding it prior to a time when the image is to be displayed, comprising: generating a bitmap representing boundary pixels in the image separating regions in the image, the regions comprising image pixels of the image, each region between boundary pixels being composed of one of the textures (color A, color B, and color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns); generating a pointer for each of the regions, each of the pointers associating its respective region with the one of the textures for the image in such region (figures 10, 11, and 13); and storing the bitmap of boundary pixels, and the pointers defining the textures for the regions between boundary pixels for later use in displaying the image (4 in figure 1; figures 10, 11, and 13; column 5, lines 25-27 and lines 36-37; and column 5, line 66-column 6, line 4).

As to claim 2, Harrington teaches that the boundaries comprise pixels of a first value, and the regions comprise pixels of values other than the first value (figure 12).

As to claim 3, Harrington teaches that the assigning codes to the textures in the image (tables 2 and 3).

As to claim 4, Harrington teaches that the each of the pointers includes one of the codes (table 2).

As to claim 5, Harrington teaches that the each of the pointers includes a location in one of the regions (table 2).

As to claim 6, Harrington teaches that the each of the pointers comprises a single location (table 2).

As to claim 7, Harrington teaches that the each of the regions comprises a single one of the textures (figure 12).

As to claim 8, Harrington teaches that the boundaries comprise a first one of the textures (color X in figure 12).

As to claim 9, Harrington teaches that the generating the bitmap comprises converting each pixel in the image which is not the first one of the textures to a second one of the textures (figure 12).

As to claim 10, Harrington teaches that the generating the pointers comprise finding a location in each of the regions which is not the second one of the textures (figures 10, 11 and 13).

As to claim 11, Harrington teaches that the bitmap has one bit per pixel (figures 17 and 18).

As to claim 12, Harrington teaches that the encoding the bitmap (abstract, lines 1-4).

As to claim 13, Harrington teaches that the step of encoding comprises run-length-encoding (column 8, lines 22-27 and table 1).

As to claim 14, Harrington teaches a method comprising: compressing a digital image having at least three textures and at least two regions, to reduce the amount of storage space required for holding it prior to a time when the image is to he display, comprising: assigning a code for each of the textures in the image (color A, color B, and

color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns); generating a pointer for each of the regions, each of the pointers associating its respective region with one of the textures, each of the pointers comprising a location and a code (figures 10, 11, and 13); generating a bitmap, the bitmap representing boundary pixels of a first one of the textures separating the regions in the image, by converting each pixel in the image not of the first one of the textures to a second one of the textures (color X pixels in figure 12); and storing the bitmap of boundary pixels and the pointers associating the region with its texture for later use in displaying the image (4 in figure 1; figures 10, 11, and 13; column 5, lines 25-27 and lines 36-37; and column 5, line 66-column 6, line 4).

As to claim 15, Harrington teaches a computer stored data structure comprising: a bitmap representing boundary pixels separating regions in an image, the boundary pixels comprising pixels of the image, the regions comprising image pixels of the image, each region between boundary pixels being composed of one of the textures (color A, color B, and color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns); and pointers, each associating its respective region with a texture for the digital image in that region (figures 10, 11, and 13).

As to claim 16, Harrington teaches a palette associating each of the textures with a code (table 2).

As to claim 17, Harrington teaches that the each of the pointers includes a location and a code associated with a texture (figure 10).

As to claim 18, Harrington teaches that the each of the pointers comprises a single location and a single code (figures 10, 11, and 13).

As to claim 19, Harrington teaches that the bitmap has one bit per pixel (figures 17 and 18).

As to claim 20, Harrington teaches that the bitmap is encoded (abstract, lines 1-4).

As to claim 21, Harrington teaches that the bitmap is run-length-encoded (column 8, lines 22-27 and table 1).

As to claim 22, Harrington teaches a method comprising: decompressing a digital image having at least three textures whose amount of storage space required for holding it prior to a time when the image is to be displayed has been reduced, comprising: providing a bitmap representing only boundary pixels of the separating regions, the regions comprising image pixels of the image, each region between boundary pixels being composed of one of the textures (color A, color B, and color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns); referencing a pointer that associates one of the textures with one of the regions; and filling the regions in the bitmap with its associated texture (figures 10, 11, and 13; and column 11, lines 57-63).

As to claim 23, Harrington teaches that the bitmap has one bit per pixel (figures 17 and 18).

As to claim 24, Harrington teaches that the decoding the bitmap (column 16, lines 41-62).

As to claim 25, Harrington teaches that the decoding comprises run-length-decoding (column 16, lines 41-62, column 8, lines 22-27 and table 1).

As to claim 26, Harrington teaches that the converting the bitmap from one bit per pixel to multiple bits per pixel (column 16, lines 41-62).

As to claim 27, Harrington teaches that the filling the one of the regions comprises referencing a pointer to determine a location, and converting one of the regions containing the determined location into the associated one of the textures (figures 10, 11, and 13; and column 11, lines 57-63).

As to claim 28, Harrington teaches that the filling the one of the regions further comprises determining a function associated with the associated one of the textures, converting, according to the function, each pixel in the region containing the determined location into a pixel color (figures 10, 11, and 13; and column 11, lines 57-63).

As to claim 29, Harrington teaches that the converting the each pixel comprises seed filling (column 11, lines 57-63).

As to claim 30, Harrington teaches that the seed filling is commenced at the determined location (column 11, lines 57-63).

As to claim 31, Harrington teaches a method comprising: displaying a digital image having at least three textures whose amount of storage space required for

holding it prior to a time when the image is to be displayed has been reduced, comprising: providing a bitmap representing only boundary pixels in the image separating regions, the regions comprising image pixels of the image, each region between boundary pixels being composed of one of the texture (color A, color B, and color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns), referencing a pointer that associates one of the textures with one of the regions (figures 10, 11, and 13); filling the one of the regions in the bitmap with the associated one of the textures (column 11, lines 57-63) and overlaying the image on a background (color A in figure 12 is a background and color X is the border color and color B is an object's interior color taught at column 8, lines 11-13).

As to claim 33, Harrington teaches a method comprising: displaying a digital image having at least three textures whose amount of storage space required for holding it prior to a time when the image is to be displayed is reduced, comprising: generating a bitmap representing only boundary pixels in the image separating digital image regions in the image, the regions comprising image pixels of the image, each region between boundary pixels being composed of one of the textures (color A, color B, and color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns), generating a pointer for each of the regions, each of the pointers associating its respective region with the one of the textures for the digital image in such storing the bitmap of boundary, pixels and the pointers defining the textures for the regions between boundary pixels for later use in displaying the image,

referencing the pointers associating the one of the textures with the one of the regions (figures 10, 11, and 13); filling the regions in the map with its associated one of the textures (column 11, lines 57-63); and overlaying the image on a background (color A in figure 12 is a background and color X is the border color and color B is an object's interior color taught at column 8, lines 11-13).

As to claim 34, Harrington teaches apparatus comprising: a microprocessor, a memory coupled to the microprocessor, the memory being configured to cause the microprocessor to compress a digital image having at least three textures to reduce the amount of storage space required for holding it prior to a time when the image is to be displayed (figure 21), by: a) generating a bitmap representing only boundary pixels; in the image separating regions in the image, the regions comprising image pixels of the image each region between boundary pixels being composed of one of the texture (color A, color B, and color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns); b) generating a pointer for each of the regions, each of the pointers associating its respective region with the one of the textures for the image in such region (figures 10, 11, and 13); and c) storing the bitmap of boundary pixels and the pointers defining the textures for the regions between boundary pixels in a memory coupled to the microprocessor for later use in displaying the image (4 in figure 1; figures 10, 11, and 13; column 5, lines 25-27 and lines 36-37; and column 5, line 66-column 6, line 4).

As to claim 35, Harrington teaches that the method of producing a digital image for efficient compression, the digital image being made up of a plurality of textures, the

method comprising: defining a texture palette, wherein each possible texture of the digital image is assigned a unique code (color A, color B, and color X in figure 12; Note: specification page 2, lines 20-22 discloses that the at least three textures are colors or patterns); generating a bitmap of the digital image, wherein the bitmap comprises: pixels of one code representing boundaries of the digital image (color x in figure 12); and pixels of different codes representing textures of the digital image (color a and color b in figure 12); and decolorizing the bitmap of the digital image into a monochrome bitmap made up of only two pixel values, one pixel value representing the boundaries of the digital image (two color encoding at column 7, lines 25-60 would separate foreground from background).

As to claim 38, Harrington teaches that the monochrome bitmap of the digital image is stored as one byte per pixel of the monochrome bitmap (column 7, lines 25-60).

As to claim 39, Harrington teaches that the monochrome bitmap of the digital image is compressed from one byte per pixel into one bit per pixel (figure 17 and column 11, line 50-column 12, lines 16).

As to claim 40, Harrington teaches that the one bit per pixel monochrome bitmap is further compressed using an RLE compression method (column 8, lines 22-27 and table 1).

As to claim 41, Harrington teaches that the each unique code of the texture map is an index into either a bitmap representing a texture or a function used to generate a texture (figures 10, 11, and 13).

As to claim 42, Harrington teaches that the textures of the texture map which are solid colors are generated by a one-pixel bitmap (figures 17 and 18).

As to claim 43, Harrington teaches that the each unique code of the texture map is a one-byte code (column 7, lines 25-60).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (571) 272-7448. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Yon Couso/
Primary Examiner, Art Unit 2624
July 27, 2009